

Discussion Points / Questions Regarding Rico-Argentine St. Louis Tunnel OU1 Proposed Schedule Modifications

The following is provided in response to the proposed schedule modifications and in preparation for our meeting on April 30th to discuss the tasks and schedules. Also, one item that is needed that would aid in the discussions regarding the points below is a current site conceptual model. A great deal of progress has been made towards understanding the conditions at the site and the alternatives associated with completing the tasks outlined in the Administrative Order. Please provide a current version of the site conceptual model for our meeting on April 30th.

Repository Selection and Design

Atlantic Richfield requested that repository location selection be postponed until March 2014, the repository design and operating plan be postponed until October 2014, and construction mobilization be postponed until May 2015. It is unclear why these tasks need to be delayed for such a long period. The following items need to be addressed in order to evaluate the need for the schedule change.

1. What information is still needed to identify the repository location?
 - a. Based on the geotechnical investigations to date, it appears that sufficient information has been gathered to select a storage site. Is there additional information that AR believes is required, and if so, what specifically is needed and what work is required to obtain it? Please provide a summary and interpretation of the geotechnical information obtained to support selection of a site repository location and design, and provide this information during our meeting on April 30th.
 - b. The South Stacked (Alternative A) Repository site, currently appears to be adequate for the existing solids and substantial additional volume of solids in the future. This does not preclude allowing the size of the repository to be modified after a conceptual design for water treatment is selected. Is there a reason the South Stack - Alternative A location cannot be selected?
 - c. If required, final investigation tasks can be completed this summer and conceptual designs can be developed this fall. If a decision to permit this repository area is made, then that can be accomplished this winter. Construction can begin in 2014 as planned. If an expansion is needed based on a final water treatment system requirement, then that can be accomplished at a later date. Currently, the proposed schedule for the water treatment conceptual design (task F3) is March 2014, which will allow for a confirmation of the solids repository decision as a function of the water treatment approach. Is there
2. If Pond 13 is still under consideration as a potential permanent repository location, a summary and interpretation of data related to conditions associated with groundwater and calcines at Pond 13 must be provided to EPA.
 - a. Calcines chemistry, well chemistry, and well water level data have been provided to EPA, but interpretation of the data relative to potential long-term use of Pond 13 and potential increased release of heavy metals from the calcines has yet to be submitted. An evaluation of this information must be presented and discussed during the April 30 meeting.
 - b. How will ground water levels influence selection and design of a Pond 13 repository?

- i. Would seasonally varying water levels within Pond 13 cause mobilization of contaminants placed in the repository? Evaluation of this factor should consider annual and seasonal variations in water levels. 2012 data should be interpreted in context of drought conditions and not be considered a typical water year.
 - ii. Would a Pond 13 repository be lined? How is this influenced by water levels?
 - c. Would placing water treatment solids in Pond 13 increase the mobility of contaminants in the underlying calcine tailings? Would seasonal/annual variations in water levels cause contaminants to flow from the site to the Dolores River?
 - d. If the decision regarding the use of Pond 13 as a repository is related to groundwater mounding from discharges along the collapsed portion of the St. Louis Tunnel adit, has any modeling been performed to evaluate potential water levels if the water is captured and not allowed to discharge into the alluvium?
3. Is there any reason the permit process can't be started during 2013? The state needs to be in the process early and doesn't need a full design to initiate permit discussions.

Calcine Tailings **Calcines**

This may not be an issue if the South Stack area is used. Pond 13 poses a greater concern for this.

- 1. Primary Questions: Is the presence of ~~calcine tailings~~calcines in the Pond 16/17 and Pond 13 areas or at other site locations allowing a significant contribution of metals to the Dolores River? How does this affect the location selection and/or design of drying and disposal facilities?
 - o Metals concentration and water level data for wells within and surrounding Ponds 16/17 and 13 should be evaluated to determine if the calcines have the potential to be a significant source of contaminants to the Dolores River.
 - o Are the contaminants in the ~~calcine tailings~~calcines mobilized by groundwater and/or by the presence of drying solids?
 - o If groundwater currently mobilizes metals from the calcines, will installation of hydraulic controls reduce or eliminate the problem?
 - o Do the calcines affect the ability to use Pond 13 for drying or as a partial/temporary repository?
- 2. Please provide any available technical interpretation of the calcines data. ~~EPA's preliminary evaluation is attached but does not include consideration of the amount of contaminants that are transported away from the Pond 16/17 and Pond 13 areas, geochemical interactions, and influences from groundwater that currently flows from the collapsed adit area.~~

Adit Collapse Area

Atlantic Richfield has requested and EPA has approved new deadlines for tasks related to hydraulic control measures for the adit collapse area. The extended deadline should accommodate the need to identify alternatives to access the Hermosa Formation in the St. Louis Tunnel for installation of hydraulic controls. The ability to control releases from the St. Louis Tunnel will likely affect other site work- and decisions. EPA requests answers to the following questions related to the hydraulic controls.

- 1. Are preliminary findings available regarding an upper aquifer near the collapse area? What is the extent of groundwater mounding near the adit collapse area? What would be the effect of capturing that water on the water table near Pond 18? Pond 16/17?
- 2. Collection of water within the St. Louis Tunnel may lower ground water levels near the tunnel and decrease the volume of water that flows through the site, thus potentially reducing contaminant mobilization and dispersion. Is the mounded groundwater expected to affect decisions regarding work at other parts of the site, i.e., solids management in Pond 13 or

identifying the need to reduce mobilization of contaminants from calcines in the solids drying/Pond 16/17 area?

3. Is there an estimate of the volume of water escaping the tunnel behind the blockage that might need to be treated if captured?

Water Treatment

Atlantic Richfield has requested that the deadline for conceptual/30 percent design for a water treatment system be extended from March 2013 to March 2014 and that final design be postponed until April 2015, with construction beginning in May 2015. While that time may be needed for evaluation of current pilot-scale and demonstration testing, it is EPA's intent that the deadlines not continue to be extended beyond those currently proposed by Atlantic Richfield. Toward that end, EPA requests that answers to the following questions be provided as soon as possible even if some of the answers are tentative.

1. The passive treatment demonstration project will be constructed and begin operation during early to mid-summer 2013. When will adequate data be available to evaluate the demonstration passive treatment system? Is the information that will be gathered needed for selecting a water treatment conceptual design or is it intended for information gathered from the demonstration passive system to be used for system design?
2. What information is being collected to identify procedures for processing residuals such as spent constructed wetlands and rock drain materials and for estimating disposal requirements? Is this information needed for selecting a water treatment conceptual design or for final system design? When will adequate data be available for selecting and designing a solids management system?
3. What are the conceptual designs currently being considered? Are all tests? Plans for any additional evaluations and testing required to support selection and design of each alternative in testing? should be finalized by June 1, 2013.

any data gaps addressed now rather than after conceptual designs are established.